

AMENDMENT OF THE CLAIMS

The listing of claims below replaces all prior versions, and listings, of claims:

1. (Canceled).

2. (Currently Amended) ~~The method of claim 1 further comprising~~ A method  
for use in a mobile communications network, comprising:  
defining a band of carrier frequencies for the mobile communications  
network;  
for a first cell segment, allocating one of the carrier frequencies in the  
band for communicating beacon control signaling;  
for another cell segment, allocating the one of the carrier frequencies to  
carry bearer traffic;  
allocating a plurality first group of carrier frequencies to the first cell  
segment, and allocating a second, distinct group of carrier frequencies to a second cell  
segment that is different from the another cell segment,  
wherein the one carrier frequency for communicating beacon control  
signaling is part of the plurality first group of carrier frequencies allocated to the first cell  
segment.

1           3.       (Currently Amended) ~~The method of claim 2, further comprising: A~~  
2 method for use in a mobile communications network, comprising:  
3               defining a band of carrier frequencies for the mobile communications  
4 network;  
5               for a first cell segment, allocating one of the carrier frequencies in the  
6 band for communicating beacon control signaling;  
7               for another cell segment, allocating the one of the carrier frequencies to  
8 carry bearer traffic;  
9               allocating a plurality of carrier frequencies to the first cell segment,  
10              wherein the one carrier frequency for communicating beacon control  
11 signaling is part of the plurality of carrier frequencies allocated to the first cell segment;  
12              defining a hopping sequence among the allocated plurality of carrier  
13 frequencies; and  
14              excluding the one carrier frequency for communicating beacon control  
15 signaling from the hopping sequence.

1           4.       (Currently Amended) The method of claim 3, further comprising  
2 communicating traffic channels carrying the bearer traffic on carrier frequencies assigned  
3 according to the hopping sequence.

1           5.       (Original) The method of claim 4, further comprising constantly  
2 communicating the beacon control signaling at the one carrier frequency.

1           6.       (Original) The method of claim 3, further comprising providing a  
2 fractional reuse pattern in the mobile communications network.

1           7.       (Original) The method of claim 6, further comprising using, in each cell  
2 segment, a fraction that is less than all of the allocated carrier frequencies at any one  
3 time.

1           8.       (Currently Amended) The method of claim [[1]] 2, wherein allocating the  
2 one carrier frequency for communicating beacon control signaling comprises allocating  
3 the one carrier frequency for communicating a broadcast control channel.

1           9.       (Original) The method of claim 8, wherein defining the band of carrier  
2 frequencies for the mobile communications network comprises defining the band of  
3 carrier frequencies for at least one of the following networks: a Global System for Mobile  
4 (GSM) network; a General Packet Radio Service (GPRS) network; an Enhanced GPRS  
5 (EGPRS) network; and a Global System for Mobile/Enhanced Data Rate for Global  
6 Evolution Radio Access Network (GERAN).

1           10.      (Currently Amended) ~~The method of claim 1, further comprising A~~  
2 method for use in a mobile communications network, comprising:  
3                   defining a band of carrier frequencies for the mobile communications  
4 network;  
5                   for a first cell segment, allocating one of the carrier frequencies in the  
6 band for communicating beacon control signaling;  
7                   for another cell segment, allocating the one of the carrier frequencies to  
8 carry bearer traffic; and  
9                   providing a fractional reuse pattern in the mobile communications  
10 network.

1           11.      (Original) The method of claim 10, wherein providing the fractional reuse  
2 pattern comprises providing one of a 1x3 fractional reuse pattern and a 1x1 fractional  
3 reuse pattern.

1           12.      (Canceled)

1           13.      (Currently Amended) The article of claim [[12]] 17, wherein the  
2 instructions when executed cause the system to further assign a group of carrier  
3 frequencies to the first cell segment, the group comprising the first carrier frequency.

1           14.   (Original) The article of claim 13, wherein the instructions when executed  
2   cause the system to exclude the first carrier frequency from communicating traffic  
3   channels in the first cell segment.

1           15.   (Original) The article of claim 14, wherein the instructions when executed  
2   cause the system to further define a hopping sequence for the first cell segment among  
3   the group of carrier frequencies, the hopping sequence excluding the first carrier  
4   frequency.

1           16.   (Currently Amended) ~~Thee article of claim 15, wherein the instructions~~  
2   ~~when executed cause the system to further~~ An article comprising at least one storage  
3   medium containing instructions for providing communications in a mobile  
4   communications network having a band of carrier frequencies, the instructions when  
5   executed causing a system to:  
6               assign, to a first cell segment, a first carrier frequency for communicating  
7   beacon control signaling from the band of carrier frequencies;  
8               assign, to another cell segment, the first carrier frequency to communicate  
9   traffic channels;  
10              assign a group of carrier frequencies to the first cell segment, the group  
11   comprising the first carrier frequency;  
12              exclude the first carrier frequency from communicating traffic channels in  
13   the first cell segment;  
14              define a hopping sequence for the first cell segment among the group of  
15   carrier frequencies, the hopping sequence excluding the first carrier frequency; and  
16              exclude carrier frequencies used for beacon control signaling in  
17   neighboring cell segments of the first cell segment from the hopping sequence.

1           17.     (Currently Amended) ~~The article of claim 15, wherein the instructions~~  
2 ~~when executed cause the system to further~~ An article comprising at least one storage  
3 medium containing instructions for providing communications in a mobile  
4 communications network having a band of carrier frequencies, the instructions when  
5 executed causing a system to:

6                     assign, to a first cell segment, a first carrier frequency for communicating  
7 beacon control signaling from the band of carrier frequencies;

8                     assign, to another cell segment, the first carrier frequency to communicate  
9 traffic channels; and

10                    assign a fractional reuse pattern to the mobile communications network.

1           18.     (Currently Amended) The article of claim [[12]] 17, wherein the beacon  
2 control signaling comprises a broadcast control channel.

1           19.     (Original) The article of claim 18, wherein the mobile communications  
2 network is selected from the group consisting of: a Global System for Mobile (GSM)  
3 network; a General Packet Radio Service (GPRS) network; an Enhanced GPRS (EGPRS)  
4 network; and a Global System for Mobile/Enhanced Data Rate for Global Evolution  
5 Radio Access Network (GERAN).

1           20.     (Canceled)

1           21.     (Currently Amended) ~~The system controller of claim 20~~ A system  
2 controller, comprising:  
3                 an interface to communicate with cell site equipment of a mobile  
4 communications network; and  
5                 a processor adapted to assign carrier frequencies from an entire available  
6 band of carrier frequencies to cell segments,  
7                 the processor adapted to assign, to a first cell segment, a first carrier  
8 frequency to carry beacon control signaling, the first carrier frequency selected from the  
9 entire available band of carrier frequencies,  
10                the processor adapted to assign, to another cell segment, the first carrier  
11 frequency to carry bearer traffic,  
12                wherein the processor is adapted to assign a plurality of carrier frequencies  
13 to the first cell segment, the plurality of carrier frequencies comprising the first carrier  
14 frequency,  
15                the processor is adapted to further define a hopping sequence for the  
16 traffic channels in the first cell segment,  
17                the hopping sequence including the plurality of carrier frequencies but  
18 excluding the first carrier frequency.

1           22.     (Original) The system controller of claim 21, wherein the processor is  
2 adapted to define a fractional reuse pattern for the mobile communications network.

1           23.     (Currently Amended) The system controller of claim ~~20~~ 21, wherein the  
2 beacon control signaling comprises a broadcast control channel of a Global System for  
3 Mobile (GSM) mobile communications network.

1           24.     (New) The method of claim 3, further comprising providing a fractional  
2 reuse pattern in the mobile communications network.

1           25.     (New) The method of claim 3, further comprising excluding carrier  
2 frequencies used for beacon control signaling in neighboring cell segments of the first  
3 cell segment from the hopping sequence.

1           26.     (New) The method of claim 3, wherein the first cell segment is a cell sector  
2 that is part of a cell having plural cell sectors, the method further comprising:  
3                 allocating the first group of carrier frequencies to each of the cell sectors  
4 in the cell;  
5                 defining the same hopping sequence for each of the cell sectors in the cell;  
6 and  
7                 assigning different hopping sequence offsets to respective cell sectors such  
8 that hopping through the hopping sequence is out of phase in the plural cell sectors.

1           27.     (New) The system controller of claim 21, where in the processor is  
2 adapted to include frequencies use for beacon control signaling in neighboring cell  
3 segments of the first cell segment from the hopping sequence.

1           28.     (New) The system controller of claim 21, wherein the first cell segment is  
2 a sell sector that is part of a cell having plural cell sectors, and wherein the processor is  
3 adapted to further:  
4                 allocate the plurality of carrier frequencies to each of the cell sectors in the  
5 cell;  
6                 define the same hopping sequence for each of the cell sectors in the cell;  
7 and  
8                 assign different hopping sequence offsets to respective cell sectors such  
9 that hopping through the hopping sequence is out of phase in the plural cell sectors.